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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Rafi Rabipour

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EXAMINER

ABELSON, RONALD B

ART UNIT

PAPER NUMBER

2616

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/682,070	Applicant(s) RABIPOUR ET AL.	
	Examiner Ronald Abelson	Art Unit 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 February 2004 and 10 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 and 38-42 is/are rejected.
- 7) ☒ Claim(s) 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 12-15, 21 - 24, 27, 28, 30-35, and 38-40, rejected under 35 U.S.C. 103(a) as being unpatentable over Harada (US 2003/0135376) in view of Strickland (US 5,933,487).

Regarding claims 1, 21 - 24, 38-40, Harada teaches an interface (fig. 4 box 103) for enabling communication with a remote entity (fig. 4 box 110) via a network (fig. 4 box 106).

Harada teaches a control entity (fig. 4 box 105) in Harada teaches communication with said interface and operative to: establish a packet-switched connection with the remote entity through the network (mobile switching center 103 sends a packet of a termination request through IP network, having received packet termination request, mobile switching center 107 sends termination request to mobile terminal 110, [0053]).

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Harada teaches negotiate with the remote entity into a codec-bypass mode of operation (mobile terminal 110 sends termination acknowledgement containing codec list, [0053], mobile switching center 107 sends a packet of a codec type to mobile switching center 103, [0054], codec 102 of mobile 101 has received codec control request, [0055], communications between terminals 101, 101 according to the bypass connection are started, [0058]).

Harada is silent on using in-band signaling.

Strickland, like Harada teaches call setup in a mobile environment, furthermore, the reference teaches in-band signaling (inband signals, mobile switching center, remote, call setup, abstract).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Harada by negotiating with the remote entity to establish a codec-bypass mode using in-band signaling, as suggested by Strickland. This modification can be performed in software. This modification would benefit the system since in-band signaling is a proven, reliable, bandwidth efficient method of transporting signaling information.

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Regarding claims 2 and 30, the control entity being operative to exchange control information over said connection (Harada: mobile switching center 103 sends a packet of a termination request through IP network, having received packet termination request containing codec type list, mobile switching center 107 sends termination request containing a codec type list to mobile terminal 110, [0053])). The examiner corresponds the applicant's control information to the codec type list of the reference.

Regarding claims 3 and 31, the connection carries call setup information exchanged between the data communication apparatus and the remote entity (Harada: communications between terminals started, [0058])).

Regarding claims 4 and 32, the control information and the call setup information are exchanged asynchronously to one another. See claims 2 and 3: note the setup occurs after the control information / codec type list, is sent.

Regarding claims 12 and 33, the connection carries audio information exchanged between the data communication apparatus and the remote entity (Harada: [0002])).

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Regarding claims 13 and 34, the control information and the audio information are exchanged asynchronously to one another. (codec type list to mobile terminal 110, [0053], communications started, [0058]). Note, first the control information / codec type list, is transmitted and then the audio information begins.

Regarding claim 14, the control entity is further operative to exchange compressed audio information with the remote entity after successful negotiation of the entry into the codec-bypass mode of operation (Harada: speech, [0002], signals compressed and expanded / expanded, twice, [0011]). Note, compression takes place at the mobiles.

Regarding claim 15, the control entity is further operative to exchange the compressed audio information over said connection (Harada: speech, [0002], signals compressed and expanded / expanded, twice, [0011]).

Regarding claim 27, the control entity being adapted to use in-band signaling to negotiate entry of the data communication apparatus into a codec-bypass mode of operation (Strickland:

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inband signals, mobile switching center, remote, call setup, abstract).

Regarding claim 28, the control entity being adapted to use in-band signaling (Strickland: inband signals, mobile switching center, remote, call setup, abstract) to negotiate codec selection at the data communication apparatus and at the remote access network (Harada: mobile switching center 103 sends a packet of a termination request through IP network, having received packet termination request, mobile switching center 107 sends termination request to mobile terminal 110, [0053]).

Regarding claim 35, the data communication apparatus being an access network controller (fig. 4 box 103, 105). Note, the MSC provides access to the IP network (fig. 4 box 106).

3. Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada in view of Strickland and Alperovich (US 6,600,738).

Regarding claim 41, Harada teaches an interface (fig. 4 box 103) for enabling communication with a remote entity (fig. 4 box 110) via a network (fig. 4 box 106).

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Harada teaches a control entity (fig. 4 box 105) in Harada teaches communication with said interface and operative to: establish a packet-switched connection with the remote entity through the network (mobile switching center 103 sends a packet of a termination request through IP network, having received packet termination request, mobile switching center 107 sends termination request to mobile terminal 110, [0053]).

Harada teaches negotiate with the remote entity into a codec-bypass mode of operation and successful negotiation of entry into the codec-bypass mode of operation (mobile terminal 110 sends termination acknowledgement containing codec list, [0053], mobile switching center 107 sends a packet of a codec type to mobile switching center 103, [0054], codec 102 of mobile 101 has received codec control request, [0055], communications between terminals 101, 101 according to the bypass connection are started, [0058]).

Harada is silent on using in-band signaling.

Strickland, like Harada teaches call setup in a mobile environment, furthermore, the reference teaches in-band signaling (inband signals, mobile switching center, remote, call setup, abstract).

Therefore it would have been obvious to one of ordinary



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skill in the art, to modify the system of Harada by negotiating with the remote entity to establish a codec-bypass mode using in-band signaling, as suggested by Strickland. This modification can be performed in software. This modification would benefit the system since in-band signaling is a proven, reliable, bandwidth efficient method of transporting signaling information.

The combination is silent on forwarding compressed audio information received from the first entity to the second entity and forward compressed audio information received from the second entity to the first entity.

Alperovich teaches forwarding compressed audio information received from the first entity to the second entity and forward compressed audio information received from the second entity to the first entity (mobile station, compressing, decompressing, voice, col. 3 lines 52-55).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by installing the codec of Alperovich in the mobiles of the combination, as shown by Alperovich. This modification would benefit the system by enabling the mobile to compress the audio.

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Regarding claim 42, the data communication apparatus being a gateway (fig. 4 box 105). Note, the MSC provides access to the IP network (fig. 4 box 106).

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada and Strickland as applied to claim 3 above, and further in view of Alperovich.

Regarding claim 5, in addition to the limitations previously addressed, the combination teaches the control entity is further operative to exchange information with the remote entity after successful negotiation of the entry into the codec-bypass mode of operation (Harada: [0058]).

Although the combination teaches the codec-bypass mode, the combination is silent on compressed audio information.

Alperovich teaches compressed audio information (mobile station, compressing, decompressing, voice, col. 3 lines 52-55).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by installing the codec of Alperovich in the mobiles of the combination, as shown by Alperovich. This modification would benefit the system by enabling the mobile to compress the audio.

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Regarding claim 6, the control entity is further operative to exchange the compressed audio information over said connection (Alperovich: mobile station, compressing, decompressing, voice, col. 3 lines 52-55).

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada, Strickland, and Alperovich as applied to claim 5 above, and further in view of Cao (US 6,721,269).

Regarding claim 7, although the combination teaches exchanging the compressed audio information, the combination is silent on establish a second connection with the remote entity through the network.

Cao teaches establish a second connection with the remote entity through the network (establish a plurality of paths between source and destination, col. 4 lines 41-48).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by establish a second connection with the remote entity through the network, as shown by Cao. This modification can be performed in according to the teachings of Cao. This modification would

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benefit the system by having a backup path in the event of failure (Cao: col. 4 lines 41-48).

Regarding claim 8, control entity is further operative to suspend the exchange of audio information over the first connection (Cao: failure, a secondary path is selected as the new primary path, col. 4 lines 41-48).

6. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada, Strickland, Alperovich, and Cao as applied to claim 7 above, and further in view of Cruz (US 20060046658).

Although the combination teaches a second connection for exchanging compressed audio information, the combination is silent on control entity is further operative to exchange the compressed audio information over said second connection while continuing the exchange of audio information over the first connection.

Cruz teaches simultaneously exchanging information over both the first and second connections (support high traffic loads, activates a large number of links simultaneously, [0105]).

Therefore it would have been obvious to one of ordinary

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skill in the art, to modify the system of the combination by simultaneously transmitting compressed audio information over both connections simultaneously, as suggested by Cruz. This modification can be performed according to the teachings of Cruz. This modification would benefit the system in high traffic load conditions.

7. Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada, Strickland, Alperovich, Cao and Cruz as applied to claim 9 above, and further in view of Zerbe (US 6,985,530).

Regarding claim 19, the combination is silent on the audio information exchanged over the first connection is in an uncompressed format.

Zerbe teaches transmitting over a connection in an uncompressed format (col. 2 lines 14-18).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by transmitting data over the first connection in an uncompressed format, as shown by Zerbe. This modification would benefit the system since the received data can be read immediately without the need for decompression.

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Regarding claim 11, a codec (fig. 4 box 103, 109) for decompressing compressed audio information destined for the remote entity via the first connection and compressing decompressed audio information received from the remote entity via the first connection (Harada: signals compressed and expanded / expanded, twice, [0011]). Note, in this context, expanded is equivalent to decompressed.

8. Claims 16 and 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada and Strickland as applied to claim 14 above, and further in view of Cao (US 6,721,269).

Regarding claim 16, although the combination teaches exchanging the compressed audio information, the combination is silent on establish a second connection with the remote entity through the network.

Cao teaches establish a second connection with the remote entity through the network (establish a plurality of paths between source and destination, col. 4 lines 41-48).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by

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establish a second connection with the remote entity through the network, as shown by Cao. This modification can be performed in according to the teachings of Cao. This modification would benefit the system by having a backup path in the event of failure (Cao: col. 4 lines 41-48).

Regarding claim 17, control entity is further operative to suspend the exchange of audio information over the first connection (Cao: failure, a secondary path is selected as the new primary path, col. 4 lines 41-48).

9. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada, Strickland, and Cao as applied to claim 16 above, and further in view of Cruz (US 20060046658).

Regarding claim 18, although the combination teaches a second connection for exchanging compressed audio information, the combination is silent on control entity is further operative to exchange the compressed audio information over said second connection while continuing the exchange of audio information over the first connection.

Cruz teaches simultaneously exchanging information over both the first and second connections (support high traffic

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loads, activates a large number of links simultaneously,  
[0105])).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by simultaneously transmitting compressed audio information over both connections simultaneously, as suggested by Cruz. This modification can be performed according to the teachings of Cruz. This modification would benefit the system in high traffic load conditions.

10. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada, Strickland, Cao and Cruz as applied to claim 18 above, and further in view of Zerbe (US 6,985,530).

Regarding claim 19, the combination is silent on the audio information exchanged over the first connection is in an uncompressed format.

Zerbe teaches transmitting over a connection in an uncompressed format (col. 2 lines 14-18).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by transmitting data over the first connection in an uncompressed



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format, as shown by Zerbe. This modification would benefit the system since the received data can be read immediately without the need for decompression.

Regarding claim 20, a codec (fig. 4 box 103, 109) for decompressing compressed audio information destined for the remote entity via the first connection and compressing decompressed audio information received from the remote entity via the first connection (Harada: signals compressed and expanded / expanded, twice, [0011]). Note, in this context, expanded is equivalent to decompressed.

11. Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada and Strickland as applied to claim 24 above, and further in view of Xu (US 6,885,638).

Regarding claim 25, the combination is silent on the control entity being adapted to use in-band signaling to coordinate power control for the connection.

Xu teaches in-band signaling to coordinate power control for the connection (col. 1 lines 61-67).

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Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by transmitting power control messages in-band, as shown by Xu. This modification can be performed in software. This modification would benefit the system since in-band signaling is an efficient use of bandwidth.

12. Claim 26 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada and Strickland as applied to claim 24 above, and further in view of Aiello (US 20030072273).

Regarding claim 26, the combination is silent on the control entity being adapted to use in-band signaling to coordinate link adaptation for the connection.

Aiello teaches in-band signaling to coordinate link adaptation for the connection ([0050]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by in-band signaling to coordinate link adaptation for the connection, as shown by Aiello. This modification can be performed according to the teachings of Aiello. This modification would benefit the system since in-band signaling is an efficient use of bandwidth.

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13. Claim 29 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada and Strickland as applied to claim 24 above, and further in view of Henderson (US 6,353,666).

Regarding claim 29, the combination is silent the control entity being adapted to use in-band signaling to negotiate audio quality enhancement of the connection.

Henderson teaches the control entity being adapted to use in-band signaling to negotiate audio quality enhancement of the connection (col. 8 lines 49-51).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by the control entity being adapted to use in-band signaling to negotiate audio quality enhancement of the connection, as shown by Henderson. This modification can be performed according to the teachings of Henderson. This modification would benefit the system since in-band signaling is an efficient use of bandwidth.

14. Claim 36 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Harada and Strickland as applied to claim 24 above, and further in view of Hellwig (US

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2004/0100914).

Although the combination teaches in-band signaling, the combination is silent on the "Iu" user plane protocol.

Hellwig teaches the "Iu" user plane protocol ([0002]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by establishing connections between the MSCs and IP network (Harada: fig. 4 boxes 103, 106, 107) according to the "Iu" user plane protocol, as suggested by Hellwig. This modification can be performed according to the 3GPP (Hellwig: [0002]). This modification would benefit the system by making it compatible with 3GPP.

#### ***Allowable Subject Matter***

15. Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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**Conclusion**

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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*ra*

Ronald Abelson

Examiner

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